

The Effects of the Self and Match System on Reducing Vocal and Physical Stereotypy and Increasing Self-Management Repertoires

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PARTICIPANT

The participants in this study were four students, 7-10 years old (three male, one female). All participants had a diagnosis of Autism Spectrum Disorders (ASD). Participants received between 4-15 hours of intensive behavior intervention in their home setting, approximately 2-5 days per week. Instructional sessions were provided by a trained behavioral interventionists and overseen by a Board Certified Behavior Analyst (BCBA). All participants attended their local public school 5 days per week and had passed the Naming assessment with 80% or above accuracy (Greer, Stolfi, Chavez-Brown, & Rivera-Valdez, 2005).

Participant	Age	Diagnosis	Type of Stereotypy
A	10	ASD	Vocal & Physical Stereotypy
B	9	ASD	Verbal Stereotypy
C	7	ASD	Physical Stereotypy
D	8	ASD	Vocal & Physical Stereotypy

SETTING

The study was conducted within a major metropolitan area with baseline and intervention data collected in each participant's home environment. Space in each home was set aside for instruction in the living room, dining room, or bedroom settings with participants and interventionists seated at a table within the instructional setting.

LITERATURE REVIEW

- Self-management consists of setting goals for oneself, recording one's own behavioral results, and self-reinforcement (Alberto & Troutman, 2009).
- Peterson, Young, Salzberg, West, and Hill (2006) found that the addition of a match component to a self-management procedure was effective in increasing on-task behavior and accurate responses to vocal directions. Peterson et al. (2006) also observed marked increases in appropriate social skills in the classroom setting.
- The Self & Match system (Salter & Croce, 2014) is behavior intervention package that incorporates aspects of the Differential Reinforcement of Other behaviors (DRO) and a self-monitoring checklist.
- Self-monitoring is cost effective and not as intrusive or stigmatizing than monitoring performed by a clinician, therapist or other adult, thus facilitating easier generalization to other settings (Koegel, Frea, & Surratt, 1994; Kratochwill, Sheridan, Carlson, & Lasecki, 1999; Webber, Scheuermann, McCall, & Colean, 1993).
- A reduction in stereotypic behavior of children with autism results in dramatic increases in overall communication, social and academic functioning. There has been limited research about the effectiveness of a self-monitoring system to decrease stereotypic behavior in children with autism (Koegel & Koegel, 1989).
- The benefits of employing this methodology include the ability to use self-monitoring in the absence of a treatment provider, and the ability to utilize self-management systems in a wide range of settings (Koegel & Koegel, 1990).

VARIABLES

Dependent Variable: The dependent variables for this study were the frequency of all stereotypical behaviors and duration of tantrum and elopement behaviors for each participant. Target behaviors were individually selected based on the needs of each participant and were defined as:

- Physical Stereotypy- repetitive hand/body movements, separated by a 3 second pause that are self-stimulatory in nature
- Vocal Stereotypy- repetitive speech sounds, separated by a 3 second pause that are self-stimulatory in nature

Independent Variable: The independent variable for this study was a Self & Match intervention (Salter & Croce, 2004). The Self & Match intervention requires both instructors and participants to respond to a series of individualized questions regarding the latter's target behaviors during intervention sessions. Examples include: "Am I following directions?" and "Did I make good choices?" Each question was then followed with supplemental clarifying questions and was tailored to each participant's reading and comprehension skills, with some including picture prompts. Additionally, the duration of the initial interval for each participant was derived from his/her baseline data.

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ABSTRACT

In the current study, a delayed multiple baseline design across participants was utilized to assess the effectiveness of the Self & Match intervention in reducing stereotypical behaviors and increasing self-management skills. The study was conducted in each participant's home environment within a major metropolitan area. Participants were selected after pre-intervention baseline measures indicated high rates of stereotypical (vocal and physical) behaviors. Baseline measures included assessing the percentage of accuracy with which participants intermittently across 5 consecutive sessions. Furthermore, participants were all assessed for and were found to have the Naming capability in repertoire. The dependent variable in this experiment was the frequency of stereotypical behaviors. The independent variable in this study was the Self & Match intervention, a derivative of the differential reinforcement of other behavior procedure, which requires participants to respond to a series of individualized survey questions and compare Parent and/or Therapist responses.

PROCEDURE

PRE-INTERVENTION BASELINE

Baseline data were collected on the total frequency of target behaviors per hour for each participant. In addition, participants were asked a series of three questions throughout baseline sessions. Responses were unsequenced. Baseline data were collected for five consecutive instructional sessions.

INTERVENTION

Individualized data sheets were provided for each participant targeting specific behaviors including tantrum, non-compliance, elopement, and vocal protest. Participants were presented with their individualized data sheet. Instructors reviewed reflective questions designed to help participants identify their own behaviors, discussed behavioral expectations for each response, and the specific time interval that would be monitored. After each interval, the timer was stopped and the Self & Match data sheet was reviewed with the participant. Participant responses were recorded one item at a time followed immediately by the instructor response. Instructors explained his or her responses to the participant. Once all responses were recorded, the instructor and participant calculated points earned during that interval as well as cumulative points earned. Once the data sheet was completed, the instructor and participant reviewed the total points earned and determined if the participant had earned the minimum points required to access his or her reinforcers. A short reinforcement break was given if the child earned the minimum 32/40 points. Intervention immediately resumed following the reinforcer break. If the child did not earn the minimum points, the intervention immediately resumed. This continued until the child met the minimum instructional criteria of 90% accuracy across three instructors or 100% accuracy across two instructors, at which point the required time interval was increased. The intervention continued until the participant was able to meet the minimum instructional criteria across a 10 minute interval.

POST-INTERVENTION PROBE

Upon reaching criteria for 10 minute intervals for the intervention phase, the intervention was withdrawn and participants returned to baseline for five days. Following five days in the baseline condition, each participant was asked the same series of three questions throughout a five day period. Responses were unsequenced. The return to baseline phase was collected for a minimum of five consecutive instructional sessions.

DISCUSSION

The results of the current study demonstrated that measuring one's own stereotypical behavior through a self-monitoring intervention with a match component functioned to decrease the frequency of vocal stereotypy behavior in some participants (Participant A and Participant D); however, the intervention was not shown to decrease the frequency of physical stereotypy behavior for either participant. Participant B's intervention was prematurely discontinued after the client discontinued ABA services. There was no significant reduction in Participant D's vocal stereotypy. Participant C had a slight decrease to his hand stiffening behavior due to the self and match intervention. Participants A and D reduced vocal stereotypy below baseline levels but the frequency of physical stereotypy did not decrease during intervention. Overall, results demonstrated that the Self and Match intervention was effective in reducing vocal stereotypy in some participants, but did not demonstrate effectiveness across physical stereotypy. This suggests that the reinforcement for engaging in vocal stereotypy is mediated differently than that for physical stereotypy. Future research goals include changing reinforcement schedules and conditioning automatically reinforced behavior with prosthetic reinforcement during the self and match intervention for participants engaging in physical stereotypy.

RESULTS

During the initial baseline phases, all participants emitted levels of target behavior exceeding their individualized exit criteria for these behaviors. At this time, no participants have met the minimum instructional criteria and post-intervention probes are pending.

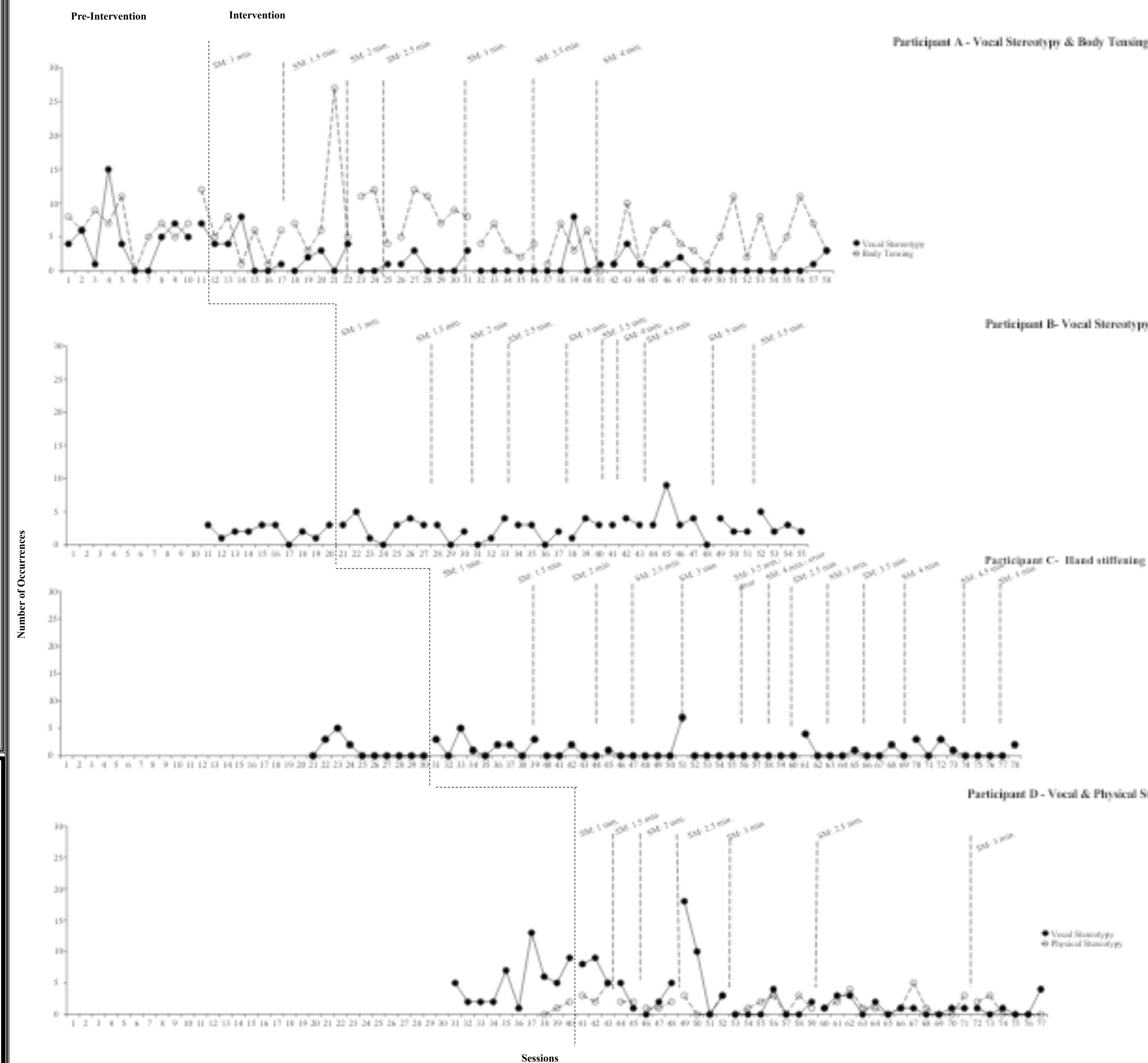


Figure 1: Baseline & Intervention Behavior Data